BAA 03-07

Spectral Sensing of Bio-Aerosols Program

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Proposer Information Pamphlet (PIP)

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1 PROPOSER INFORMATION

The Defense Advanced Research Projects Agency (DARPA) often solicits research efforts through the Broad Agency Announcement (BAA). The BAA is announced in the Federal Business Opportunities (*Fed Biz Ops*, http://www.fedbizopps.gov) published by the U.S. Government, Department of Commerce. The following information is for parties interested in responding to the BAA.

It is the policy of DARPA to treat all proposals as competitive information and to disclose the contents only for the purposes of evaluation. The Government evaluation team will consist of Government personnel from DARPA and other Government agencies. For this solicitation, non-Government advisors from Booz Allen Hamilton Inc., who have signed appropriate non-disclosure and conflict of interest statements, may assist in the proposal administration and review process when their particular expertise is required; however, they will not participate in the final source selection process.

DARPA requires that all parties interested in participating in this BAA register their organization by providing a principal point of contact, phone number, fax and email to baa03-07@darpa.mil with the SUBJECT LINE: BioAerosols POC INFORMATION.

2 PROGRAM BACKGROUND AND GOALS

A critical component of an effective biological warfare (BW) defense is realtime, pre-exposure detection, discrimination, and identification of the full spectrum of threats: spore, bacteria, virus and toxin. The Spectral Sensing of Bio-Aerosols program will develop sensors to address the urgent need for biological weapons agent (BWA) trigger sensors and detect-to-warn sensors with fast response times and significantly improved false alarm rates (P_{fa}). The goal of this program is to develop point detection sensors with response times of less than one minute and with at least a one order of magnitude reduction in false alarm rate relative to current sensors. A specific set of performance goals will be provided in a separate document. (This document will provide a matrix of specific threat organisms, the maximum time allowed for detection, the threshold levels of threat quantity and the detector performance defined as a paired probability of detection and probability of false alarm.). The program will also evaluate whether any of the proposed sensors can provide detection and localization of biological agents at useful standoff ranges.

Investigators of biosensors have long held the belief that useful optical signatures can be exploited to detect bio-aerosols with improved selectivity and reduced false alarm rates. To date, the few measurements that exist have been made under widely varying conditions and are not conclusive. Under the Spectral Sensing of Bio-Aerosols (SSBA) program, DARPA will conduct a rigorous evaluation of the potential to exploit these signatures with the goal of developing systems that rapidly detect biological agents with good sensitivity and a low false alarm rate. All proposed technologies must be able to operate as a point detector, and may be proposed in a configuration that exploits air collection and concentration technologies in that role. The technologies explored under this program will also be evaluated for their potential to provide

standoff detection. Standoff detection concepts may include cooperative targets such as retro-reflectors or other novel deployment configurations.

3 TECHNICAL SCOPE

Through this BAA, referred to as SSBA, the Government solicits proposals to design and develop high-risk, high-leverage technologies and prototypes that have the potential to greatly reduce the false alarm rate of trigger sensors for biological warfare agents. Offerors may propose the development of novel technologies or innovative combinations of technologies. DARPA is interested in sensor concepts that exploit signatures throughout the electromagnetic spectrum - including Terahertz (THz), Raman, and infrared spectroscopy, multi-spectral florescence, photo-acoustic spectroscopy - as well as techniques such as optically induced mass spectroscopy. A proposal in response to this BAA may cover one or several approaches, as well as approaches not specifically listed above. The goal is to determine the optimal combination of signatures to meet the trigger objectives, and then build and test such a prototype sensor.

DARPA will execute the SSBA program with two coordinated and parallel tracks. Under the first track, a government referee and testbed (GRT) team will develop an aerosol testbed and detailed bio-aerosol signature collection protocols. (Participation as part of the GRT is not the subject of this BAA.) The testbed and protocols will ensure that the signature data collected will provide a sound foundation for performance modeling, including a thorough understanding of the impact of signature variability and clutter. In addition to developing and operating the testbed, the GRT will archive all collected signature data and integrate the models generated by the various sensor developer (SD) teams (see below) into a comprehensive multi-phenomena performance model.

Under the second track, SD teams are solicited under this BAA and will be selected for funding based on their proposals to exploit the signatures as described in their sensor concept for a point detection system; proposals may describe extensions to standoff applications, if appropriate. As detailed below, these efforts will develop validated models before designing, building, and characterizing the sensors.

3.1 Sensor Developer (SD) Team Description

The SD teams will consist of performers selected under this BAA. SD teams will propose specific approaches for the development of advanced BW triggers and then under this program will develop a quantitative model for the detection performance of their concept validated by data collections supervised by the GRT. These models will be exercised to support design trades and performance predictions as part of a preliminary design review (PDR). SD teams will be selected, based upon an evaluation of their PDR, to continue into a second phase during which they will develop and build their sensor prototypes. An optional third phase may be conducted at the Government's discretion in which these sensors and the accompanying algorithms will be optimized and evaluated.

3.2 Government Referee & Testbed (GRT) Team Description

The Government Referee & Testbed (GRT) Team will be responsible for three tasks:

1) The GRT will develop a set of protocols for signature and clutter data collections. These protocols will include the number and type of signature collections and will be designed to cover a range of variability, in both signatures (of simulants) and background clutter, that can realistically be expected in operational environments. (A detailed description of these protocols will be provided during the pre-proposal conference on 5 March 2003.)

2) The GRT will operate the testbed, which will provide aerosol signature and clutter challenges during the SD teams' signature data collections. All data collections used for model validation must be collected with instrumentation provided by the SD teams, at the GRT testbed operated for the government by JHU-APL in Laurel, MD.

3) The GRT will develop an archive for both the data collected and the performance models developed. All data collected by each SD team at the GRT testbed must be provided to the GRT in a suitable electronic format. In addition, both the computer software and documentation for performance models must be provided to the GRT.

Registered bidders will be invited to a bidders' conference where detailed documentation will be provided regarding testbed protocols and operation.

4 PROGRAM STRUCTURE AND PHASES

The SSBA program will be structured in three phases. The first phase will cover model development, data collections, and system design through PDR. During the second phase, selected performers will build a sensor prototype. In the optional third phase, these prototypes will be evaluated and optimized algorithms will be developed.

4.1 Phase I

In Phase I, the SD teams will develop and validate performance models, and use these models to produce a PDR-level concept design with performance predictions for a point sensor system, and optionally for a standoff sensor system. The goal of Phase I is to evaluate sensor concepts that exploit signatures throughout the electromagnetic spectrum - including Terahertz (THz), Raman, and infrared spectroscopy, multi-spectral florescence, photo-acoustic spectroscopy - as well as techniques such as optically induced mass spectroscopy. The results of Phase I will allow the determination of the optimal combination of signatures to develop a trigger sensor with a low false alarm rate, high probability of detection and detection in less than one minute. In response to this BAA, we expect individual SD team proposals to cover one or more parts of the spectrum of exploitable signatures.

As part of Phase I, SD performers will collect simulant and clutter signatures to validate their performance models and develop algorithms for detection. The SD teams will provide and operate the instrumentation needed for the data collections, and all testing will be conducted under conditions determined by the GRT. Once validated, these models and algorithms will be used to execute trade studies identifying key sensor and signature performance drivers in order to

optimize the sensor designs as a function of the threat level and type, time-to-detect, probability of detection, probability of false alarm, and as a function of key sensor-concept-specific design parameters. The optimized design for a point sensor will be presented with performance predictions as part of the Phase I PDR. Optionally, SD teams may elect to present additional designs for standoff sensor concepts.

Phase I will result in specific sensor concept PDRs that include validated performance predictions. In addition, Phase I will result in an extensive bio-aerosol signature library and a comprehensive BW sensor performance model, delivered by each SD team to the GRT.

4.2 Phase I Downselection

Pending availability of funds, DARPA will select SD teams to continue into Phase II if, using the models validated in Phase I, their sensor design (PDR) is predicted to meet the program goal: a one order of magnitude reduction in false alarm rate with the probability of detection (Pd), threat levels and time-to-detect held fixed relative to current trigger sensors. A specific set of performance goals will be provided in a separate document. SD teams may optionally propose stand-off sensor concepts that DARPA may select for funding in addition to a point sensor implementation.

Based upon an evaluation of the work completed during Phase I, DARPA may identify two or more SD teams with complementary approaches. If this occurs, DARPA will invite the SD teams to submit a combined proposal to proceed into Phase II.

4.3 Phase II

In Phase II, each team will carry their preliminary sensor concept forward to a critical design review (CDR) followed by a build of a prototype sensor. To proceed to Phase III, the sensor prototype must demonstrate at least 72 hours of continuous operation and data collection to enable Phase III optimization and evaluation.

The GRT will continue to provide aerosol testbed support to the sensor developers during their Phase II sensor development. This testbed support will allow for the collection of additional signature data needed to refine the design of the sensor prototypes and algorithms.

4.4 Phase III

The sensor prototypes developed in Phase II will be subjected to extensive simulant, live agent and false alarm testing that will permit the performers to optimize algorithms and characterize sensor performance. The prototypes will also undergo field demonstrations. The GRT team will support the live agent and field demonstration efforts.

5 DELIVERABLES

With the exception of any financial information or other exceptions negotiated as described in §9.1.10, the deliverables listed below may be released to outside organizations, both U.S. Government and non-Government, in support of efforts to defend against attack by biological warfare agents. The performer may recommend a preferred format for each deliverable, but the

final format will be determined by the Government. For each Phase, monthly status reports are due within two weeks after the last day of each month; quarterly reports are due at the time of the quarterly reviews; and the other deliverables are due at the conclusion of each Phase.

5.1 Phase I Deliverables

The performers will provide quarterly reports in addition to monthly status reports on the work conducted under the SSBA program. Monthly reports should provide brief summaries of work performed and financial expenditures during the reported period, as well as any critical issues that have arisen. Monthly reports may be provided via email in electronic format. Quarterly reports will report progress on the sensor design, model development, algorithm testing and the ongoing trade studies.

A final briefing and final written report of results from Phase I will be prepared that includes a description of the sensor proposed for Phase II at a level of detail consistent with a preliminary design review. This will include performance predictions validated with GRT data collections, a description of the design trades that resulted in the selected design, and an enumeration of remaining unknowns and uncertainties. The report will describe all experiments and tests carried out during Phase I, and all data and analyses that result to include uncertainty analyses. Scientific and technical reports will be required for any measurement and/or modeling results, subsystem, component or technology developed as part of this effort.

In addition, SD performers will deliver all signature and clutter data collected as well as both software source code and technical descriptions of the performance models developed under this program to the GRT.

Performers will develop a detailed plan for Phase II & III, including: preliminary design of sensor prototype, an experimental plan for developing and testing the prototype; and detailed activity schedule and cost breakdown to carry out Phase II & III. This detailed plan will update the original Phase II and Phase III options submitted under this BAA.

5.2 Phase II Deliverables

Performers will provide monthly and quarterly reports, and a final report as described in Phase I, as well as the prototype and prototype design of the final sensor. A detailed systems design for the prototype, a functional description of the appropriate procedures for operation and maintenance, and the source code to use the prototype will also be delivered, if applicable.

5.3 Phase III Deliverables

Performers will provide monthly and quarterly reports, and a final report as described in Phase II. They will provide the validated algorithms developed with the prototype from Phase II.

6 SCHEDULE

The anticipated schedule is given below. Changes to dates prior to the proposal due date will be sent to all organizations that have registered their interest in this BAA. Changes to the post-award dates will be communicated directly to the selected performers.

6.1 Solicitation Schedule

A Bidders Conference will be held on 5 March 2003. Participants must register by 24 February 2003 to attend. To be considered for evaluation, proposals must be received by 1600 EST, 11 April 2003. Source selection will be completed in April 2003, followed immediately by contracting. Kickoff meetings will take place in May 2003.

Table 1. Preliminary schedule of events and deadlines associated with BAA 03-07.

DATE	*EVENT*
31 Dec 2002	FedBizOpps announcement published.
24 Feb 2003	Registration ends for Bidders Conference.
5 Mar 2003	Bidders Conference.
11 Apr 2003	Proposals due.
Apr 2003	Source selection completed. Contract negotiations.
May 2003	Kickoff meetings.

6.2 Performer Schedule (Major Milestones)

Phase I:

3Q FY04 Develop preliminary algorithms

3Q FY04 Develop and validate model

3Q FY04 Complete sensor concept trade study

4Q FY04 Conduct sensor concept PDR including validated performance predictions, block diagram design, estimated cost, logistics (Predictions must meet the program performance goals to be eligible for Phase II award.)

Phase II:

2Q FY05 Conduct sensor system CDR

1Q FY06 Complete sensor prototype

Phase III:

4Q FY06 Complete field testing and algorithm optimization with extended false alarm testing

7 FUNDING

No specific funding target is provided for the Phase I efforts, although best value to the government will be a selection criteria. It is anticipated that bidders will propose to use existing

instrumentation in most cases to carry out the Phase I data collections; therefore, DARPA expects to fund most hardware development costs during Phase II.

8 SECURITY

It is anticipated that portions of the work to be executed under this effort will require **SECRET** access. Therefore, at least two key personnel on the proposer's team must have a **SECRET** clearance and the team must have at least one facility cleared at **SECRET**. Potential offerors lacking this level of clearance are encouraged to team with organizations with the appropriate clearance levels. Personnel with appropriate security clearances, secure storage facilities, and secure computers are required. A security guide will be available at the time of the bidder's conference.

9 PROPOSAL PREPARATION INSTRUCTIONS

The Government anticipates that awards will be made during the third quarter of the Government fiscal year 2003 (May). Offerors should submit multiple year proposals that span all three phases of the program, beginning with a base period of 18 months for Phase I, and separate follow-on options of 12 months for Phase II and 12 months for Phase III. The Phase II and III sections should provide only preliminary data, which will be updated as a deliverable during Phase I. All data an offeror deems pertinent to a proposal should be submitted with the proposal. Proposals will consist of two volumes: Volume I – Technical Proposal, and Volume II – Cost Proposal. Proposals must be submitted in both print and electronic form, as described in §11.5. Proposals will be prepared in the following format: single sided, 8.5?11 inches, in at least 12 point type, single spaced with margins not less than one inch. Pages must be numbered sequentially.

Questions regarding proposal submission should be directed to one of the points of contacts listed in §11.4. Offerors are advised that only contracting officers are legally authorized to contractually bind or otherwise commit the Government.

9.1 Volume I – Technical Proposal

Volume I will be no longer than 20 pages in length, not including the cover page, table of contents, statement of work, and Appendix A. Foldouts are counted as a single page and must be no larger than 11 x 17 inches with no more than five foldouts allowed in the proposal. Only the first 20 pages of Volume I proposals will be evaluated. Proposals with fewer than the maximum number of pages are highly encouraged. Clarity in describing the work to be carried out will be used during the evaluation process as an important indicator of the ability of the proposer to plan and carry out the work.

The following outline describes the minimum requirements for Volume I and must appear in clearly marked form in the order indicated.

a) Cover Page* * Items not included in Volume I page limit

b) Table of Contents*

c) Executive Summary
d) Technical Approach
e) Statement of Work*
f) Description of Resources and Facilities
g) Schedule or Milestone Chart
h) Deliverables
i) Key Personnel Summary
j) Past Performance Summary
k) Ownership of Products
l) Organizational Conflict of Interest
m) Appendix A*

9.1.1 Cover Page

The Cover Page must include the following information in the order indicated:

a)	BAA number:	BAA03-07
b)	BAA title:	Spectral Sensing of Bio-Aerosols Program
c)	Proposal Title:	(as selected by offeror)
d)	Volume I – Technical Proposal	
e)	Prime Offeror:	(name of prime)
f)	Subcontractors:	(listed, if applicable)
g)	Technical Contact:	(name, address, phone/fax, electronic mail address)
h)	Administrative Contact:	(name, address, phone/fax, electronic mail address)
i)	Type of Business:	(large business, small disadvantaged business, other small business, HBCU or MI, other education, or nonprofit)

9.1.2 Executive Summary

The executive summary will provide an overview of the proposed technology and a brief statement of the work required to develop the approach into a working prototype (through the end of Phase II). Any outstanding features that the offeror believes distinguish the proposal should be clearly and succinctly identified here.

9.1.3 Technical Material

In this section, the offeror will provide a detailed description of the basic science and technological implementation of their proposed sensor concept. This should include both a review of the existing scientific data supporting the proposed choices as well as the key uncertainties and technical challenges. This section should include:

a) A detailed description of the proposed signature phenomena to be exploited. This should include existing data, both experimental and theoretical, that support the selection of the proposed signature mechanisms and should provide preliminary estimates when possible that demonstrate how the program goal can be met by the selected concept.

b) A preliminary description of the technological implementation anticipated for the sensor concept, including estimates of sensor cost, footprint and logistical burdens. In addition, key technical challenges required for implementation should be identified in this section.

c) A preliminary description of approach for performance modeling, including any existing model components that exist. A detailed plan for performance model development.

d) A preliminary description of the algorithms that will be used for detection and false alarm rejection for the proposed sensor concept.

e) A detailed plan for performance model validation, including a detailed plan for interacting with the GRT testbed and protocols. This should include a description of the instrumentation to be used during Phase I.

f) Additional technical data deemed relevant by the proposer.

9.1.4 Statement of Work (SOW)

The offeror will provide a SOW written in plain English, describing the proposed plans to carry out the work under this BAA. The SOW will include:

a) A breakdown of the work necessary to collect the signature data, validate the performance model and to develop the algorithm.

b) A proposed plan, including schedule, to complete this work. The Phase I plan must be specific and detailed. The Phase II & III plans may be outlined more broadly, since a detailed version will be delivered at the end of Phase I.

During the work under this BAA, it is expected that the SOW will evolve. It will be periodically reviewed and updated with Government approval.

9.1.5 Resources and Facilities

Offerors will identify all resources to be used in carrying out this work, and will specify the availability of those resources for this work. Offerors should provide a description of the instrumentation, including modifications if necessary, that will be used to support data collections during Phase I. When offerors plan to subcontract with outside organizations not part of the proposal, these organizations, their capabilities, and their commitment to providing the needed support must be clearly identified. Any interactions with or agreements with U.S. Government facilities for this purpose must also be identified.

Classified resources available for this work must be explicitly identified.

9.1.6 Schedule and Milestones

Proposals will include a graphic illustration showing the major milestones in the SOW arrayed against the proposed time and cost estimates.

9.1.7 Deliverables

Proposals will include a list of deliverables, correlated with the corresponding SOW tasks. At a minimum, offerors should include the deliverables listed in §5.

9.1.8 Key Personnel Summary

Certain skilled, experienced professional and/or technical personnel are essential for successful completion of the work to be performed under this contract. These "Key Personnel" will be identified by name in the proposal, and must include at least one person from each subcontracting organization, as well as the proposed manager of the overall effort. They will be described concisely in a few pages, listing a summary of the qualifications and relevant past efforts of each person, the critical contributions they are expected to make to the effort, their clearance level, and their proposed level of effort. The contractor agrees that such personnel will not be removed from work on this contract or replaced without compliance with §12. Other personnel identified for work on the proposal but not as critical to the success of the effort should be listed in Appendix A (see §9.1.11).

9.1.9 Ownership of Products

The U.S. Government will have ownership of all equipment and prototypes that result from this effort. The Government may choose to disseminate some of the reports and results publicly, and may discuss them at conferences and at other public and private meetings. The results may form the basis for subsequent BAA, RA, or other solicitations from DARPA or other Government organizations. The Government does not plan to broadly disseminate the detailed sensor designs submitted by the performers. The data collected in the testbed will be provided to the GRT for development of an integrated BW sensor performance model.

Successful performers under this BAA will be expected to interact with performers under other Government-funded efforts, and these interactions will necessitate the sharing of technical and performance information about their Government-funded activities. Performers should be

prepared to reveal, if necessary for this purpose and under appropriate non-disclosure agreements, some of the product developed as part of their work under this BAA.

The Government expects to retain, at a minimum, Government Purpose Rights (GPR) to all intellectual property (IP) resulting from this effort, including technical data and computer software and computer documentation, as set forth in DFARS 252.227-7013 and DFARS 252.227-7014. The Government will entertain negotiations for exceptions from GPR, under limited circumstances, as set forth under DFARS 252.227-7013(b)(4) and DFARS 252.227-7014(b)(4). The proposal should include a summary of any previously existing proprietary claims to results, prototypes, or systems that will play a role in this work, and describe what aspects of existing systems will not be divulged to the Government. If there are no proprietary claims this section will consist of a statement to that effect. Any agreement for work resulting from this BAA will require continual supplementation of said proprietary claims summary. In addition, and where appropriate, Volume II of each proposal will have attached to it the information required by DFARS 252.227-7017, IDENTIFICATION AND ASSERTION OF USE, RELEASE, OR DISCLOSURE RESTRICTIONS (JUN 1995) and/or DFARS 252.227-7028 (JUN 1995) TECHNICAL DATA OR COMPUTER SOFTWARE PREVIOUSLY DELIVERED TO THE GOVERNMENT.

9.1.10 Organizational Conflict of Interest

Each proposal will contain a section to comply with the following requirements. All awards made under this BAA are subject to the provisions of the Federal Acquisition Regulation (FAR) Subpart 9.5, Organizational Conflict of Interest. All offerors and proposed subcontractors must affirmatively state whether they are supporting any DARPA technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the offeror supports and identify the prime contract number. Affirmations will be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest, as that term is defined in FAR 9.501, must be disclosed. This disclosure will include a description of the action the offeror has taken, or proposes to take, to avoid, neutralize or mitigate such conflict. If the offeror believes that no such conflict exists, then it will so state in this section.

Only those offerors whose proposals are expected to result in contract award will be required to submit a completed and signed copy of "Representations, Certifications, and other Statements by Offerors or Quoters." This document is not required for the submission of a proposal unless specifically requested. Offerors are notified that this document is frequently updated and any offeror selected for award may be requested to submit an updated "Representations, Certifications, and Other Statements by Offerors or Quoters."

9.1.11 Appendix A

This material is not included in the page limit.

PERSONNEL: The proposal will include a list of all personnel identified to work on the proposed activity. This list will include "Key Personnel", as described in §9.1.8, as well as other important prime and subcontractor personnel. A concise resume will be

provided for each person listed in this section, describing their qualifications, current clearance level, and the amount of effort committed to this work for each contract year. Key Personnel are subject to the conditions set forth in §12.

ASSOCIATE CONTRACTOR AGREEMENTS: Proposals will list all sub-contractor and other agreements existing or planned to support this work, including a description of the status of each such agreement and a copy of the proposal.

GOVERNMENT FURNISHED PROPERTY/EQUIPMENT: If any portion of the research is predicated upon the use of Government-owned resources of any type in addition to the resources of the GRT, the offeror will specifically identify the property or other resource required, the date the property or resource is required, the duration of the requirement, the source from which the resource is required, if known, and the impact on the research if the resource cannot be provided. If no Government Furnished Property other than the GRT is required to conduct the proposed research, this section will consist of a statement to that effect.

9.2 Volume II – Cost Proposal

Cost proposals have no page-length limitations; however, offerors are requested to use 15 pages as a goal. The electronic version of the Cost Proposal must be contained on the same CD-ROM, Zip disk, or diskette that contains the Technical Proposal, and any soft-copy spreadsheets must be submitted in a format usable in Microsoft Excel.

The Cost Proposal must contain the following sections, in the order listed:

a) Cover Page

b) Table of Contents

c) Budget Summary

d) Budget Details

e) Details of any cost sharing by the offeror (if proposed)

In addition, each cost proposal will contain a section that identifies the offeror's Taxpayer's Identification Number (TIN), DFARS 204.7202-3; Corporate and Government Entity (CAGE) code, DFARS 204.7202-1; and Contractor Establishment Code (CEC), DFARS 204.7202-2. The codes provided will be those of the offeror and not of the principal place of performance, if the two are different.

9.2.1 Cover Page

The Cover Page is the same as that for Volume I/Technical Proposal (see §9.1.1), except that item d) will read "Volume II – Cost Proposal".

9.2.2 Budget Summary

Proposals must include a separate budget summary for each program phase. It must show, by phase: the cost for each task identified in the SOW of the Technical Proposal, including the manpower levels of effort (labor hours and cost) by task; cost of equipment, travel, G&A, and other expenses. Costs for team members or other subcontractors must be clearly identified under the appropriate tasks, and the net amount proposed for each organization must also be separately and clearly labeled.

9.2.3 Budget Details

The cost to carry out Phase I will be specified in detail, showing the information below by Government fiscal year (October through September). Similarly detailed information will be provided for Phase II as one of the deliverables for Phase I. Similar data should be provided for sub-contracts, and may be provided by the subcontractor directly to the government.

a) Labor hours for each labor category, divided into the tasks and subtasks identified in the SOW, Volume I. Optional tasks/subtasks must be listed individually and priced separately.

b) Personnel (name or designation, rate in dollars per labor hour, and percent time on project).

c) Total cost by task/subtask identified in the SOW/Volume I.

d) Total cost by labor category, with subtotals for each task.

e) Proposed contractor-acquired equipment, itemized with costs or estimated costs. An explanation of any estimating factors, including their derivation and application, must be provided. Include under "Budget Details" a brief description of the procurement method to be used.

f) Travel costs.

g) Materials costs.

h) Other direct/indirect costs.

i) Any other information important for supplementing the Budget Summary for Phase I.

10 PROPOSAL EVALUATION

10.1 Evaluators

It is the policy of DARPA to treat all proposals as competitive information, and to disclose the contents only for the purposes of evaluation. The Government intends to use non-Government personnel as special resources to assist with the logistics of administering the proposal evaluation and to provide selected technical assistance related to proposal evaluation.

Support personnel are restricted by their contracts from disclosing proposal information for any purpose. Contractor personnel are required to sign Organizational Conflict of Interest and/or Non-Disclosure Agreements. By submission of its proposal, each offeror agrees that proposal information may be disclosed to these selected contractors for the limited purpose stated above. Any information not intended for this limited release to support contractors must be clearly marked and segregated from other submitted proposal material.

10.2 Evaluation Criteria

Proposals will not be evaluated against each other since they are not submitted in accordance with a common work statement. For evaluation purposes, a proposal is the document described in the Proposal Format Section provided above. Other supporting or background materials submitted with the proposal will be examined at the reviewer's convenience only and not considered as part of the proposal.

Evaluation of proposals will be accomplished using the following criteria listed in descending order of relative importance.

1) **Meeting or exceeding the program goal.**
An evaluation of the proposed Program Plan's likelihood to meet or exceed the program goal and objectives, defined in this Proposer Information Pamphlet (PIP). In particular, the evaluation will address the likelihood that the teams' effort will result in a well-characterized BW trigger sensor system that meets or exceeds the performance goals specified.

2) **The overall scientific merit and technical approach**.
The scientific merit and technical approach of the offeror will be evaluated against every element of the proposed effort. In particular, the following items will be considered and evaluated: scientific and technical merit of proposed approach, soundness of proposed work, and probability of success.

3) **Offeror's capabilities, past performance and related experience.**
The capabilities of the offeror to perform the stated work will be examined. In particular, the qualifications of principal investigators and their past performance on similar efforts will be considered. The range, depth, and mix of expertise of the offeror's key personnel will be evaluated to ensure that they are qualified in the theory and application of the technologies involved in the research and development related to this program. The soundness of the proposed management plan will also be considered.

4) **Proposed cost and cost realism.**
Cost will be evaluated to determine whether the offeror's estimate is reasonable and realistic for the technical and management approach offered, as well as to determine the offeror's practical understanding of the effort. Cost reasonableness will be evaluated by assessing the number of labor hours and labor mix proposed, as well as the reasonableness of other cost elements (e.g. travel, materials, subcontractors, etc). Cost realism will only be used as an evaluation criteria if

there is reason to believe that the offeror has significantly under- or over-estimated costs to complete the effort.

All awards made in response to this BAA will be subject to availability of Government funds. Evaluation and selection of proposal(s) for awards will be made to those offerors whose proposals are considered most advantageous to the Government. The Government reserves the right to select for award any, all, part or none of the proposals received in response to this announcement. All responsible sources capable of satisfying the Government's needs may submit a proposal, which will be considered by DARPA. Proposals identified for funding may result in a procurement contract, grant, cooperative agreement, or an Other Transaction Agreement depending upon the nature of the work proposed, the required degree of interaction between the parties, and other factors.

Based upon proposals received, DARPA may wish to negotiate options for follow-on technology development into resultant awards. Offerors who believe their technology solutions may afford opportunities for additional investigation or further development may wish to submit an option proposal along with their proposal for the basic effort envisioned within this BAA.

The Government anticipates including an unpriced option for Phase II & III in awards made. The evaluation and selection of Phase II performers will be based upon the deliverables described in Section 5 as well as overall performance during Phase I. A detailed cost proposal for work to be performed in Phase II & III is part of the deliverable for Phase I.

11 ADMINISTRATIVE INFORMATION AND PROPOSAL SUBMISSION

Information announcing and updating this BAA is published Federal Business Opportunities website. In addition, an electronic copy of the FBO announcement and this PIP can be found on the World Wide Web at URL https://dtsn.darpa.mil/spobioaerosols/ under “SPO Solicitations Web Page”. If the offeror does not have access to the World Wide Web, a request for the PIP can be emailed to baa03-07@darpa.mil (subject line: REQUEST PIP); or faxed to (703) 525-3754, (Attn: BAA03-07PIP Request); or mailed in written form to Booz Allen and Hamilton, Suite 750 (Attn: BAA03-07 PIP Request), 4001 Fairfax Drive, Arlington, VA 22203. The message must include the name of the POC, phone number, fax number, and an address to use for surface mail delivery if email is not available. Offerors without access to electronic means of communication should be aware of the increased response time required by surface mail.

This PIP, along with the Federal Business Opportunities (FBO) announcement, constitutes a Broad Agency Announcement (BAA) as contemplated in FAR 6.102 (d)(2)(i). Prospective offerors must refer to this PIP before submitting a proposal. This announcement does not commit the Government to pay for any response preparation cost. The cost of preparing proposals in response to the BAA is not considered an allowable direct charge to any other contract. However, it may be an allowable expense as specified in FAR 31.205-18.

Other information is available as described below.

11.1 Solicitation Registration

All parties interested in participating in this BAA must register their interest by providing the following information for their organization: a principal point of contact, phone number, fax, and email. This information should be emailed to BAA03-07@darpa.mil with the subject line "REGISTER".

11.2 Solicitation Website

At the time of registration, each organization will be provided a password for accessing the website for this solicitation. This website will contain regularly updated information about this solicitation, as necessary. It will include a list of Frequently Asked Questions (FAQ) and their answers. And it will include information regarding classified (SECRET) reports available to registered organizations with appropriate security clearances.

11.3 Bidders Conference

DARPA will host a Pre-proposal Conference on 5 March 2003 at the Kosiokoff Center at Johns Hopkins University-Applied Physics Laboratory as described at https://dtsn.darpa.mil/spobioaerosols/. Each organization that plans to attend this meeting must indicate their intention by email to BAA03-07@darpa.mil, with the subject line, "BIDDERS CONFERENCE". In addition, each organization must provide the names of all planned attendees (using the same email address). Additional instructions will be provided to those who register. Registration to attend this meeting must be received no later than 24 February 2003.

11.4 Contacting DARPA

Technical, contractual, or administrative questions will only be answered if they are submitted in writing; questions will not be answered by phone. They may be submitted through the website after registration or emailed to BAA03-07@darpa.mil . These are the preferred modes for submitting questions. For those without access to electronic communication, faxed or written questions will be accepted at the addresses listed at the beginning of §11; these must include the subject line "BAA03-07 QUESTION". Questions will be accepted until one month after the Bidders Conference (4 April 2003).

Regardless of how questions are sent to DARPA, the question and its answer (without the name of originator) will be appended to the FAQ file on the solicitation website for viewing by all registered organizations.

11.5 Submission Process

Offerors must submit an original (paper) proposal consisting of Volumes I and II, five (5) paper copies and an electronic copy on one of the following types of approved fixed media: a single CD-ROM; a single 100 Megabyte (MB) Iomega Zip® disk; or a single 3.5 inch High Density MS-DOS -formatted 1.44 MB diskette. The fixed media must contain the technical proposal in MS Word or HTML format and the cost proposal in MS Excel-readable format; both must reference BAA 03-07.

To be considered, proposals must be received by 1600 EST, 11 April 2003. Send to: DARPA, 3701 N. Fairfax Drive, Arlington, VA 22203-1714 Attn: Dr. Steven Buchsbaum. DARPA will acknowledge receipt of the submission. Proposals submitted by fax or email will be disregarded.

NOTICE TO OFFERORS REGARDING CLASSIFIED PROPOSALS: DARPA does not currently anticipate that proposals will be classified. If performers choose to submit a classified proposal, classified submissions of proposals or portions of proposals should contain the facility CAGE code, classified mailing address, and the facility security officer's name and phone number. All classified responses will be mailed in accordance with the NISPOM dated January 1995, Section 5-403. The outer wrapping shall be addressed as follows: DARPA/SPO, 3701 N. Fairfax Drive, Arlington, VA 22203 (ATTN: BAA 03-07). The inner wrapping shall be addressed to: DARPA, 3701 N. Fairfax Drive, Arlington, VA 22203-1714 Attn: Dr. Steven Buchsbaum. Proposers must provide notification of their intent to submit a classified proposal to baa03-07@darpa.mil (preferred) or by written letter to Dr. Steven Buchsbaum (address above).

11.6 Awards

The Government reserves the right to select for award all, some, or none of the proposals received in response to this announcement. Awards may be traditional FAR/DFARS contracts, grants, cooperative agreements, and/or Other Transaction Agreements. The Government is seeking participation from the widest number of offerors. All responsible sources may submit a proposal, which will be considered by the Government. Historically Black Colleges and Universities (HBCU) and Minority Institutions (MI) are encouraged to submit proposals or to team with others in submitting proposals; however, no portion of this BAA is set-aside for HBCU and MI participation, due to the impracticality of reserving discrete or severable areas of technology for exclusive competition among these entities.

12 KEY PERSONNEL REQUIREMENT

If one or more of the key personnel, as defined in §9.1.8, for whatever reason, becomes or is expected to become unavailable for work under this contract for a continuous period exceeding 15 work days, or is expected to devote substantially less effort to the work than indicated in the proposal, the contractor will immediately notify the DARPA PM and the Contracting Officer and will, subject to the concurrence of the Contracting Officer or his authorized representative, promptly replace such personnel with personnel of at least substantially equal ability and qualifications.

All requests for approval of such substitutions must be in writing and must provide a detailed explanation of the circumstances necessitating the proposed substitutions. They must contain a complete resume for the proposed substitute, and any other information requested or needed by the Contracting Officer to approve or disapprove the proposed substitute. The Contracting Officer, in collaboration with the DARPA Program Manager, will evaluate such requests and promptly notify the contractor in writing of approval or disapproval of the substitution.

If the Contracting Officer determines that suitable and timely replacement is not reasonably forthcoming for key personnel who have been reassigned, terminated, or otherwise become unavailable for the contract, or that resultant reduction of productive effort would be so substantial as to endanger successful or timely completion of the contract, then the contract may be terminated by the Contracting Officer for default or for the convenience of the Government, as appropriate. Or, if the Contracting Officer finds the contractor at fault for the condition, s/he may choose to equitably adjust downward the contract price to compensate the Government for the resultant delay, loss or damage.